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Association of Histone acetylation and DNA repair genes of Leishmania donovani effect the cytotoxicity of Ultraviolet radiation

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Background: Remodelling of chromatin affects important DNA processes such as replication, transcription, recombination, repair etc. Recent studies have shown the role of histone modifying enzyme in proliferating cell nuclear antigen (PCNA) degradation upon exposure to UV. Also, H2AX phosphorylation is an established marker for DNA damage and it is essential for the recruitment of DNA repair enzymes. In case of *Leishmnaia donovani*, it is more important because the parasite lives inside the host macrophage under very oxidative enviroment.Hence it is prone to lot of DNA damage and depend upon various survival strategies.

Methods & Materials: In the present study, the acetylation of leishmanial cells was modulated by treating the cells with HAT activator or HAT inhibitor. Treated cells were subjected to UV irradiation and cell survival was measured and compared with that of untreated cells.

Results: The HAT treated cells showed higher sensitivity towards UV rays in compare to its untreated counterpart. Our experimental observation indicates histone modifications may play an important role in the regulation of DNA repair pathway in *Leishmania donovani*.

Conclusion: This indicates role of Histone modification in the recruitment of DNA repair enzymes in *L. donovani* after DNA damage. Also, the chromatin compactness can be directly correlated with the damage induced by UV as HAT opens the chromatin structure making it more susceptible.

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A sudden paediatric death due to hand, foot and mouth disease: The importance of vigilance

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Background: Sudden death is rare in the paediatric age group. Hand, foot and mouth disease (HFMD) is caused by enteroviruses such as Coxsackie virus A16 (CVA16) and Enterovirus 71 (EV71). The severe form of this disease can lead to death due to neurological and cardiopulmonary complications. The diagnostic hallmarks are oral ulcers and macular-papular or vesicular rash on the hands and feet. Most deaths occur in hospitals with the child exhibiting the typical manifestation of the disease. This case aims to describe a fatal case of HFMD with minimal oral and skin manifestations. The lack of awareness of this phenomenon could lead to a misdiagnosis at autopsy.

Methods & Materials: **Case Report**: A four-year-old girl was brought to the Hospital after suddenly becoming unresponsive at home. She had a history of fever and lethargy for three days prior to the event. Four other children in her neighbourhood had fever with vesicular eruptions at the palm and soles. The children, including this patient, were diagnosed to have HFMD at a local clinic; the other children had recovered without complications.

Results: Autopsy revealed a well-nourished female child with appropriate build for age. There were no vesicles or other lesions seen at the characteristic places. However, close examination with a magnifying glass showed a few punctate, colourless, sub-epidermal vesicles measuring 1 to 2 mm, at the right palm and sole. Internal examination revealed prominent nodularity at the oro- and hypopharynxes. The lungs were markedly congested and oedematous. The brain, heart, liver and kidneys were grossly unremarkable. Histopathology of the lung showed pneumonic changes. Oedema with increase in macroglia and astrocytic proliferation were seen in the cerebral tissue, but no lymphocytic infiltration is evident. The oro- and hypopharynx nodularity was due to mucosal lymphoid follicle hyperplasia. Enterovirus EV71 was detected by polymerase chain reaction in samples from the lung, cerebrospinal fluid and serum. The cause of death was given HFMD complicated by pneumonia.

Conclusion: HFMD may exhibit minimal oral and skin manifestations; this is not necessarily associated with a good outcome. At autopsy, proper history, physical examination and appropriate investigations are essential for arriving at the right diagnosis.

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